Photothermal studies of single molecules and gold nanoparticles : vapor nanobubbles and conjugated polymers

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Curriculum Vitæ

Lei HOU was born on July 11, 1987 in Liaoning province, China. From September 2005 to July 2009, he studied at Changchun Institute of Optics and Fine Mechanics, China, and obtained his Bachelor degree in Applied Physics in July 2009. Later he enrolled in a Master project in the State Key Laboratory of Artificial Microstructure and Mesoscopic Physics at Peking University, China, under the supervision of Dr. Guowei Lu. He obtained his Master degree in July 2012 with the Master thesis titled "Preparation and sensing application of gold nanoparticles". In August 2012, he was awarded a scholarship from the China Scholarship Council and started his PhD research projects on the optical studies of vapor nanobubbles and single conjugated polymers at Leiden University, under the supervision of Prof. dr. Michel Orrit.

List of Publications

1. Q. Wang, G. Lu, **L. Hou**, T. Zhang, C. Luo, H. Yang, G. Barbillon, F. H. Lei, C.A. Marquette, P.Perriat, O. Tillement, S. Roux, Q. Ouyang, Q. Gong. *Fluorescence correlation spectroscopy near individual gold nanoparticle*, Chemical Physics Letters, **503(4)**: 256-261 (2011).

2. G. Lu, T. Zhang, W. Li, **L. Hou**, J. Liu, Q. Gong. *Single-molecule spontaneous emission in the vicinity of an individual gold nanorod*, The Journal of Physical Chemistry C, **115(32)**: 15822-15828 (2011).

3. G. Lu, **L. Hou**, T. Zhang, J. Liu, H. Shen, C. Luo, Q. Gong. *Anisotropic plasmonic sensing of individual or coupled gold nanorods*, The Journal of Physical Chemistry C, **115(46)**: 22877-22885 (2011).

4. G. Lu, W. Li, T. Zhang, S. Yue, J. Liu, **L. Hou**, Z. Li, Q. Gong. *Plasmonic-enhanced molecular fluorescence within isolated bowtie nano-apertures*, ACS Nano, **6(2)**: 1438-1448 (2012).

5. G. Lu, **L. Hou**, T. Zhang, W. Li, J. Liu, P. Perriat, Q. Gong. *Plasmonic sensing via photoluminescence of individual gold nanorod*, The Journal of Physical Chemistry C, **116(48)**: 25509-25516 (2012).

6. **L. Hou**, M. Yorulmaz, N.R. Verhart, M. Orrit. *Explosive formation and dynamics of vapor nanobubbles around a continuously heated gold nanosphere*, New Journal of Physics, **17(1)**: 013050 (2015).

7. T.X. Ding, **L. Hou**, H. van der Meer, A.P. Alivisatos, M. Orrit. *Hundreds fold sensitivity enhancement of photothermal microscopy in near-critical xenon*, (submitted)

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